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(21) Application number: **02189984**(71) Applicant: **HONDA MOTOR CO LTD**(22) Date of filing: **17.07.90**(72) Inventor: **KATOU NARITAKA**(54) **SEMICONDUCTOR DEVICE**

## (57) Abstract:

**PURPOSE:** To improve radiation performance and protect from environment by providing a pair of metal bases, an insulation layer formed on each side opposite to the metal bases, a electrode wiring formed on each insulation layer, and semiconductor devices where electrodes are laid out on the opposite side of each electrode wiring.

**CONSTITUTION:** Transistors  $Q_1$  and  $Q_4$  are turned on by a control signal transmitted from a gate control circuit, which forces motor drive current to flow in the order of the transistor  $Q_1$ , a motor M, and the transistor  $Q_4$ . On the other hand, transistors  $Q_2$  and  $Q_3$  are turned on, which forces motor drive current to flow in the order of the transistor  $Q_2$ , the motor M, and the transistor  $Q_3$ . In the mean time, the transistors  $Q_1$ ,  $Q_2$ ,  $Q_3$ , and  $Q_4$  are heated up. The heat is mainly transmitted to a first metal base 1 by way of drain current 4a, a drain electrode wiring 3, and an insulation layer 2. At the same time, the heat is transmitted to a second metal base by way of a source electrode 4b or a source electrode 4c and a source electrode wiring 7 or a gate electrode wiring 8, and an insulation layer 6 and further to the connected first

metal base 1. The heat thus transmitted is emitted into the air from radiation fins 1a.

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